

TC-RX50 / RX50ES

SERVICE MANUAL

US Model
TC-RX50ES

AEP Model
UK Model
TC-RX50



Photo : TC-RX50ES

SPECIFICATIONS

Recording system

4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)

Bias

AC Bias

Signal-to-noise ratio (NAB, at peak level)

DOLBY NR switch	OFF	B-TYPE ON	C-TYPE ON
Cassette			
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0 % (with Sony METAL-ES cassettes)

Frequency response

DOLBY NR OFF

- With TYPE IV cassette (Sony METAL-ES)
 - 20–20,000 Hz (± 3 dB)
 - 30–15,000 Hz (± 3 dB, OVU recording)
- With TYPE II cassette (Sony UX-S)
 - 30–17,000 Hz (± 3 dB)
- With TYPE I cassette (Sony HF-S)
 - 30–15,000 Hz (± 3 dB)

Wow and flutter

0.09% WRMS (NAB)

Inputs

Microphone inputs (phone jacks)

Sensitivity 0.25 mV (-70dB)

For a low-impedance microphone

Line inputs (phone jacks)

Sensitivity 77.5 mV (-20 dB)

Input impedance 50 kilohms

Outputs

Line outputs (phone jacks)

Output level 0.44 V (-5 dB) at load

impedance 47 kilohms

Load impedance over 10 kilohms

Headphones output (stereo phone jack)

Output level -28 dB at load impedance

8 ohms

Model Name	Using Similar Mechanism	TC-RX400
Tape Transport Mechanism	Type	TCM-170RB2

General

Power requirements

US model : 120 V AC, 60 Hz

AEP model : 220 V AC, 50/60 Hz

UK model : 240 V AC, 50/60 Hz

Power consumption

15 W

Dimensions

Approx. 430 x 118 x 255 mm (w/h/d)

(17 x 4 3/4 x 10 1/8 inches)

including projecting parts and controls

Weight

Approx. 3.8 kg (8 lbs 7 oz)

Supplied accessories

Connecting cord (2)

Remote control cord (1)



MICROFILM

STEREO CASSETTE DECK
SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

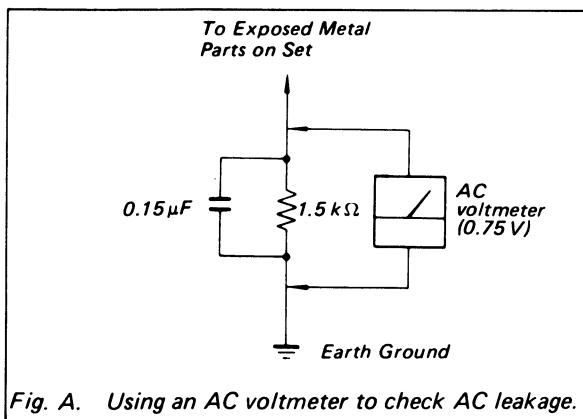


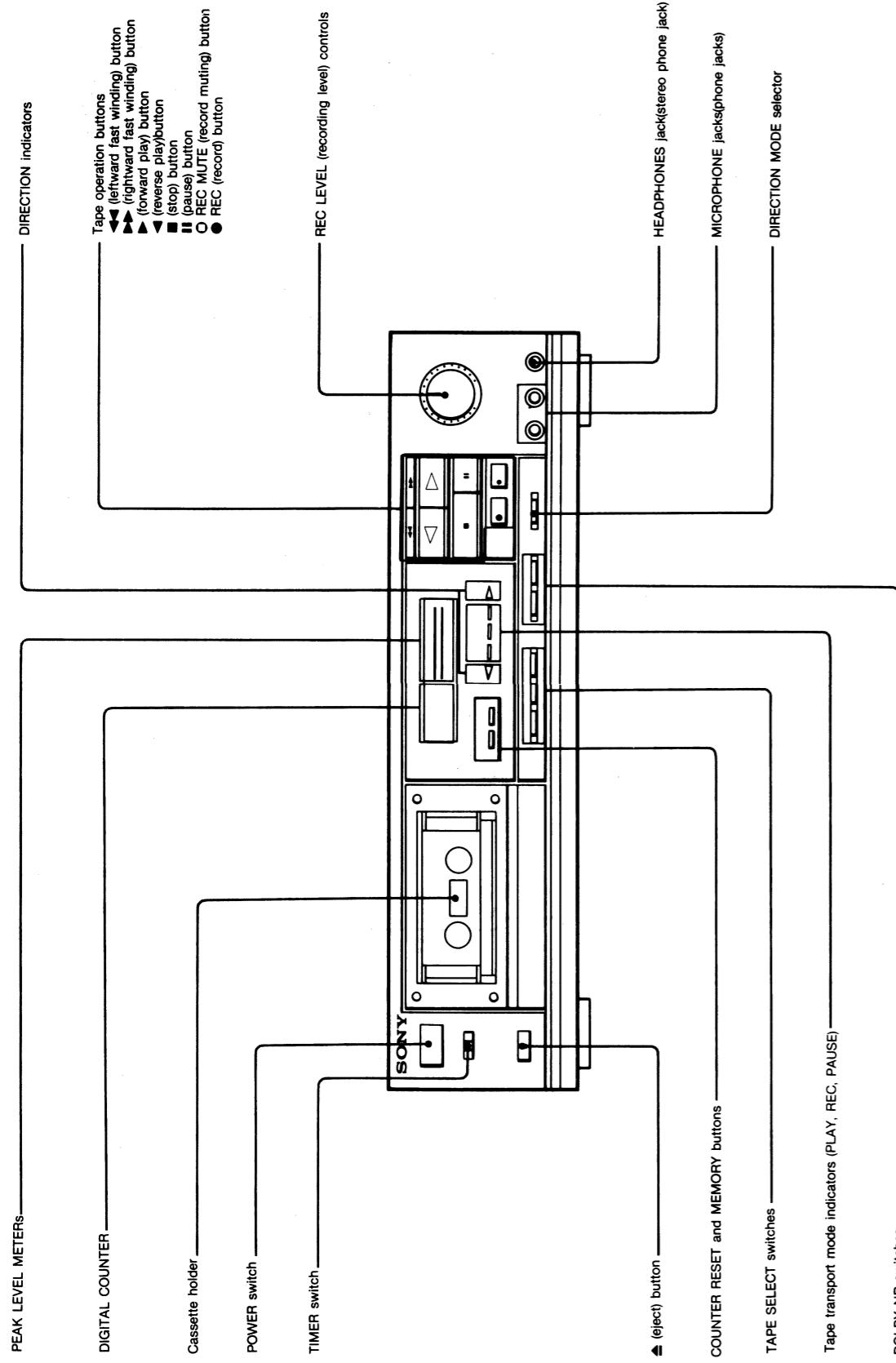
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL



1-1. LOCATION OF CONTROLS

SECTION 2 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idle
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

2-1. TORQUE MEASUREMENT

Mode	Torque Meter	Torque
FWD	CQ-102C	30-70g·cm 0.41-0.97oz·inch
FWD back tension	CQ-102C	2-6g·cm 0.03-0.08oz·inch
REV	CQ-102RB	30-70g·cm 0.41-0.97oz·inch
REV back tension	CQ-102RB	2-6g·cm 0.03-0.08oz·inch
FF,REW	CQ-201B	90-160g·cm 1.25-2.22oz·inch

SECTION 3 ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.

The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE switches according to the tape as follows.

Tape	Tape Switch
CS-17	TYPE I
CS-26	TYPE II
CS-42	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

INPUT Terminal	LINE IN
source impedance	10kΩ
input level	0.25V (-10dB)

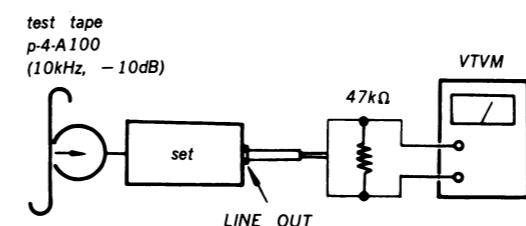
Standard Output Level

OUTPUT Terminal	LINE OUT
load impedance	47kΩ
output level	0.453V (-5dB)

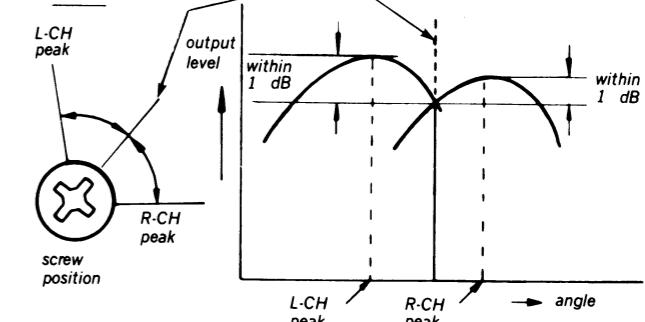
3-1. RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

Procedure:

- Mode: playback

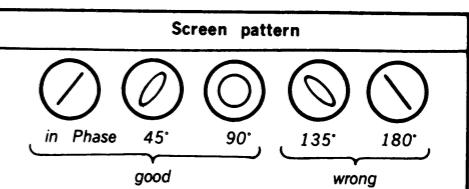
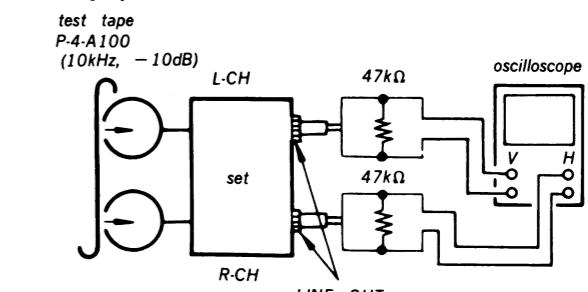


- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



- Phase Check

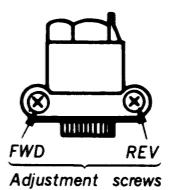
Mode: playback



- Repeat steps 1-3 in REV playback mode.

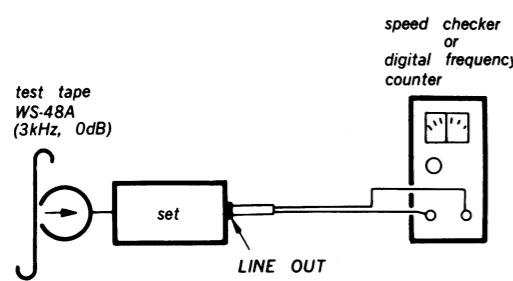
- After the adjustment, lock the screws with locking compound.

Adjustment Location :



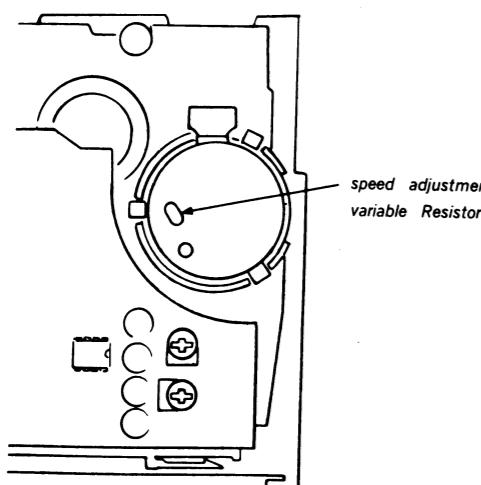
3-2. SPEED ADJUSTMENT**Procedure :**

Mode: playback

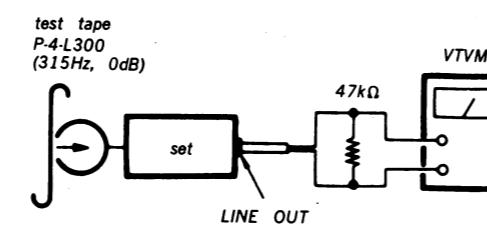
**Specification :**

Speed checker	Digital frequency counter
-1 - +1%	2,950 - 3010Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

Adjustment Location :**3-3. PLAYBACK LEVEL ADJUSTMENT****Procedure :**

Mode: Playback



Adjust RV41 (L-CH) and RV61 (R-CH)

Specification :

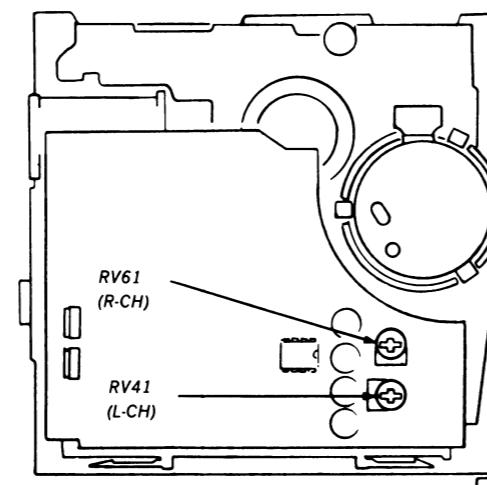
LINE OUT level: 0.39 to 0.49
(-6 to -4dB)

Level difference between channels:
less than 0.5dB(0.05V)

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location :

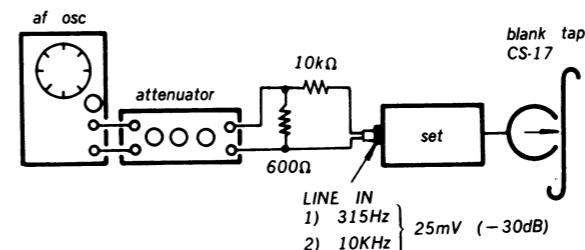
—MD board—

**3-4. RECORD BIAS ADJUSTMENT****Setting :**

REC LEVEL control: standard record
(See page 4)

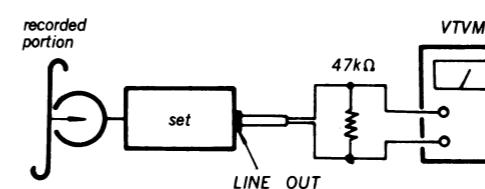
Procedure :

1. Mode: record

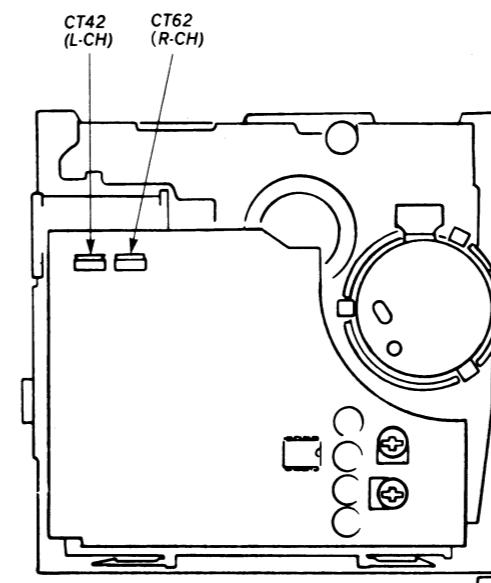


LINE IN
1) 315Hz
2) 10kHz } 25mV (-30dB)

2. Mode: playback



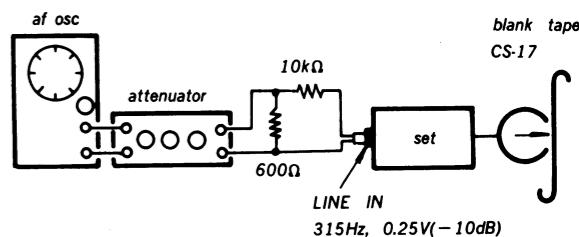
Adjust CT42 (L-CH) and CT62 (R-CH) so that the LINE OUT level of 10kHz signal is $0dB \pm 0.5dB$ relative to that of 315Hz.

Adjustment Location :**3-5. RECORD LEVEL ADJUSTMENT****Setting :**

REC LEVEL control: standard record
(See page 4)

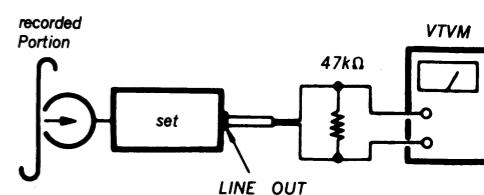
Procedure :

1. Mode: record



LINE IN
315Hz, 0.25V(-10dB)

2. Mode: playback



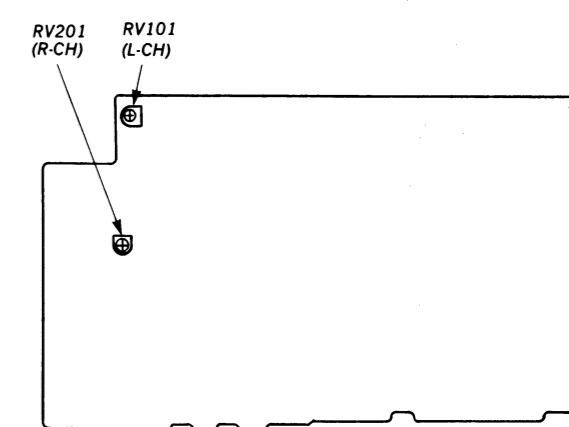
Adjust RV101 (L-CH) and RV201 (R-CH)

Specification :

LINE OUT level: 0.41 to 0.46V
(-5.5 to -4.5dB)

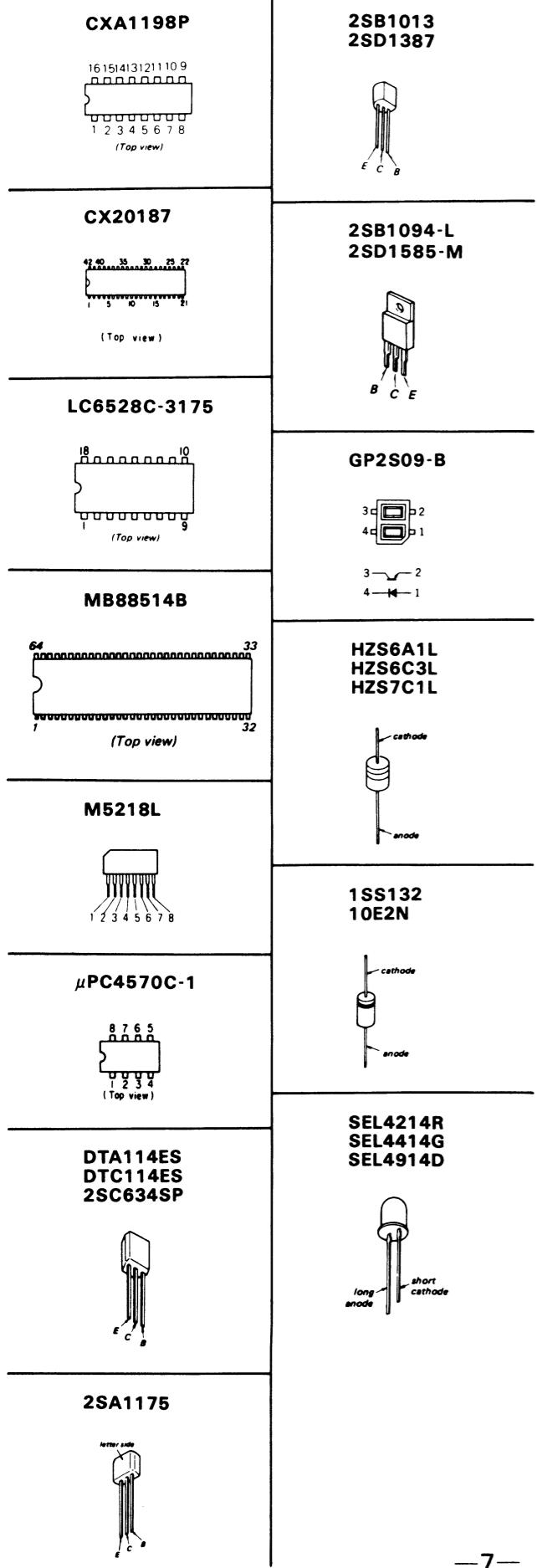
Adjustment Location :

—audio board—



SECTION 4
DIAGRAMS

• Semiconductor Lead Layouts



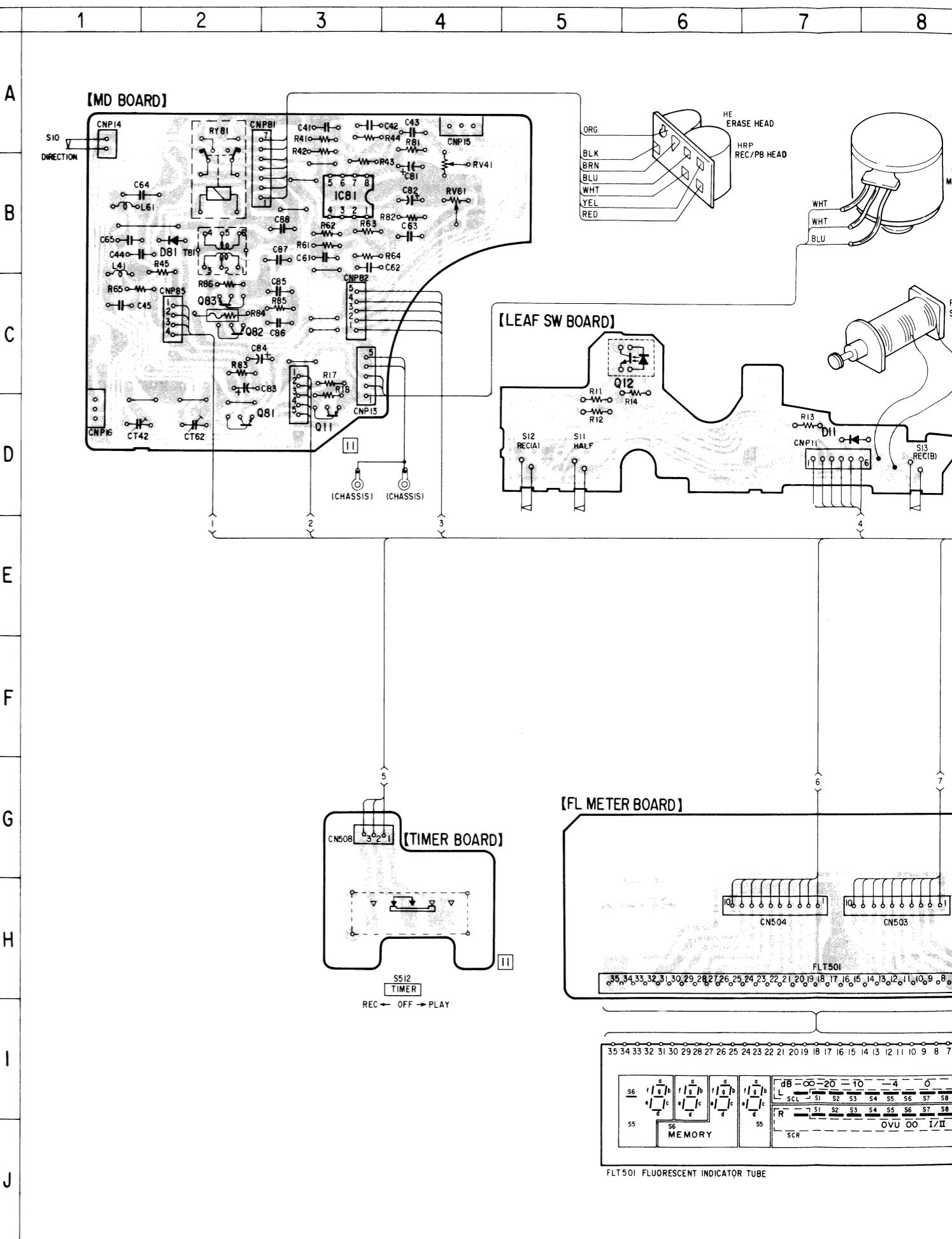
• Semiconductor Location

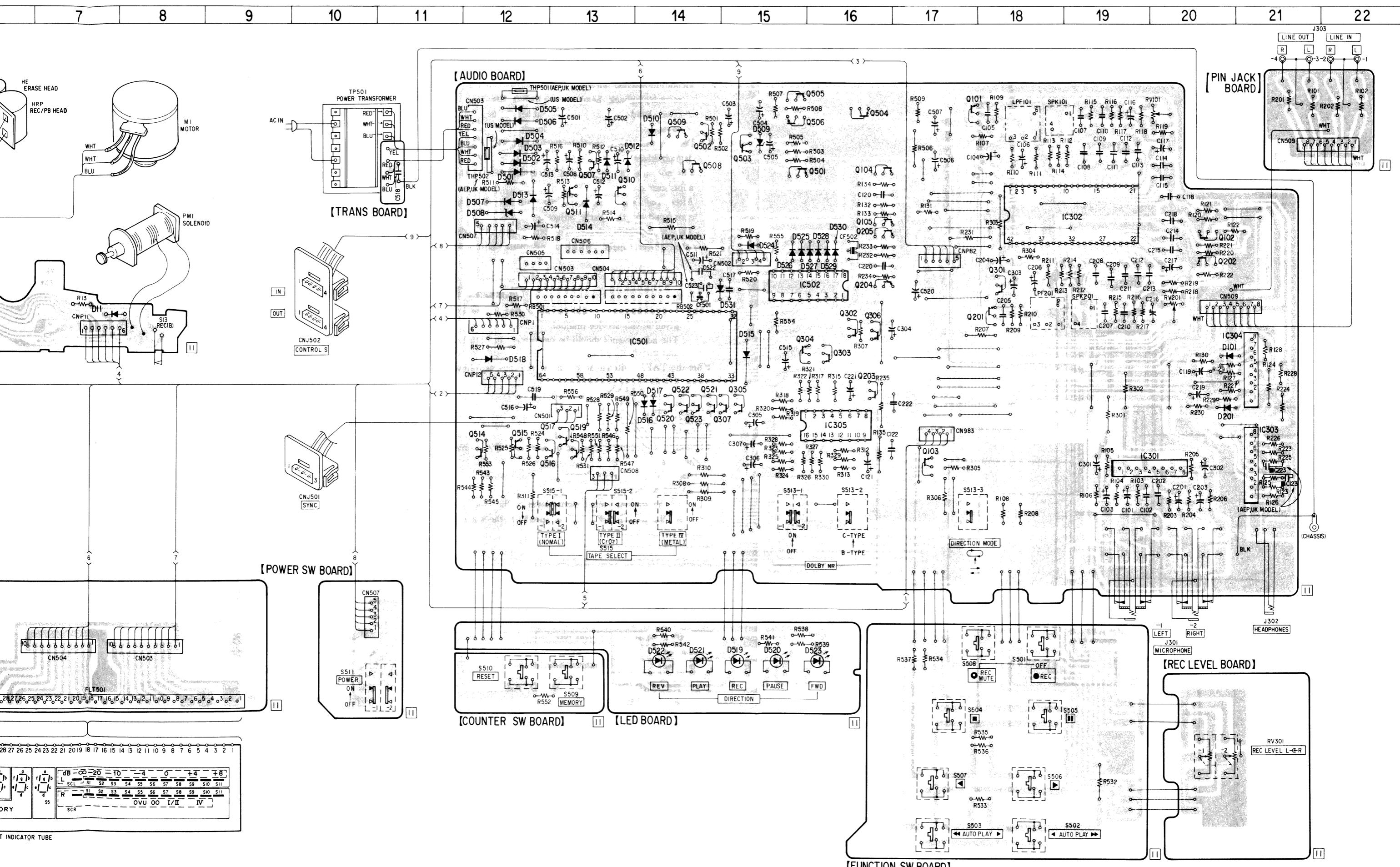
Ref. No.	Location	Ref. No.	Location
D11	D-7	Q11	D-3
D81	D-2	Q12	C-6
D101	D-20	Q81	D-2
D201	E-20	Q82	C-2
D501	B-12	Q83	C-2
D502	B-12	Q101	A-18
D503	B-12	Q102	C-20
D504	B-12	Q103	F-17
D505	B-12	Q104	B-16
D506	B-12	Q105	C-16
D507	C-12	Q201	D-18
D508	B-12	Q202	C-20
D509	B-15	Q203	E-16
D510	B-14	Q204	D-16
D511	D-13	Q205	C-16
D512	B-13	Q301	D-18
D513	C-12	Q302	D-16
D514	C-13	Q303	D-16
D515	D-15	Q304	D-16
D516	E-14	Q305	E-15
D517	E-14	Q306	D-16
D518	D-12	Q307	E-15
D519	H-15	Q501	B-15
D520	H-15	Q502	B-14
D521	H-14	Q503	B-15
D522	H-14	Q504	B-16
D523	H-16	Q505	A-15
D524	C-15	Q506	B-15
D525	C-15	Q507	B-13
D526	C-15	Q508	B-14
D527	C-16	Q508	B-14
D528	C-16	Q510	B-13
D529	C-16	Q511	B-13
D530	C-16	Q514	E-12
D531	D-15	Q515	E-12
		Q516	E-13
IC81	B-3	Q517	E-13
IC301	F-19	Q519	E-13
IC302	C-19	Q520	E-14
IC303	F-21	Q521	E-14
IC304	D-19	Q522	E-14
IC305	E-16	Q523	E-14
IC501	D-13		
IC502	D-15		

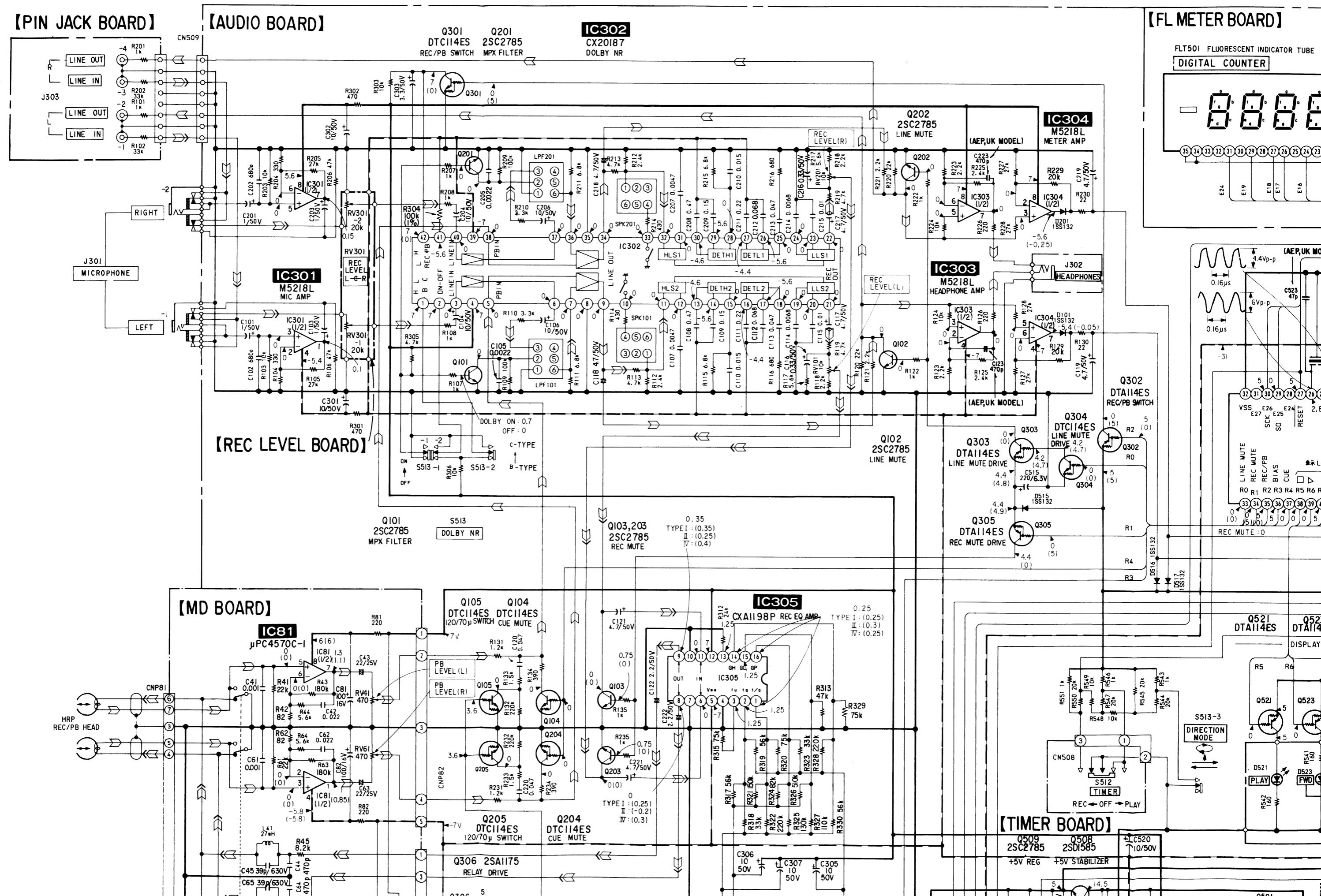
Note:

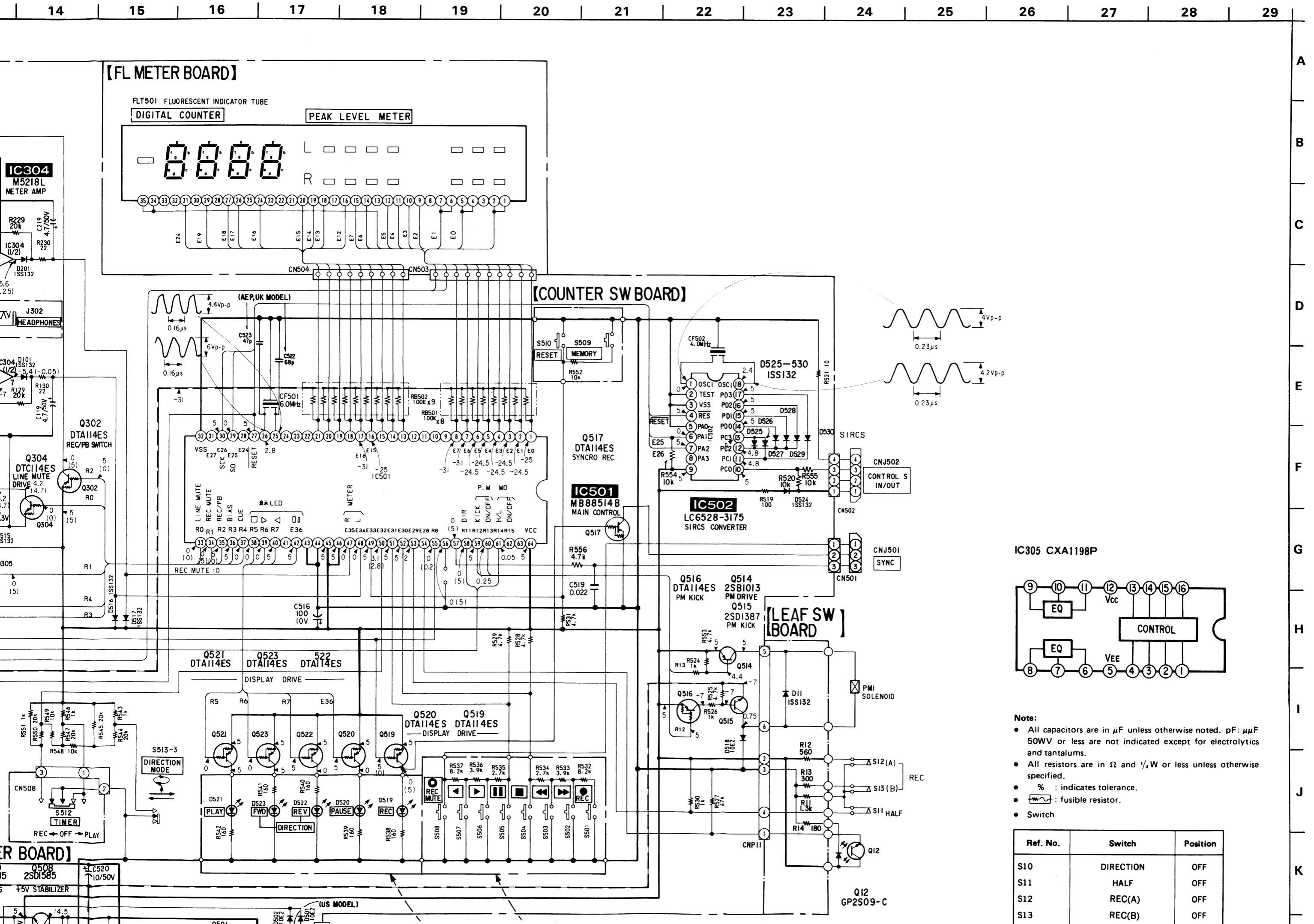
- : parts extracted from the component side.
- : parts extracted from the conductor side.

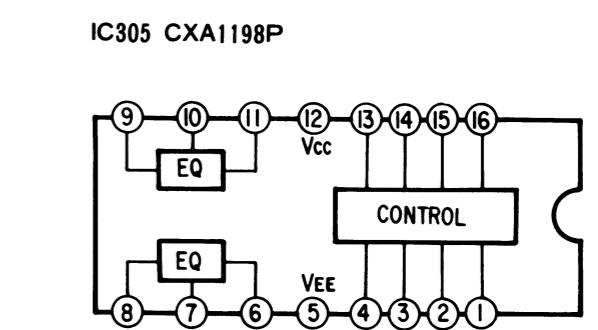
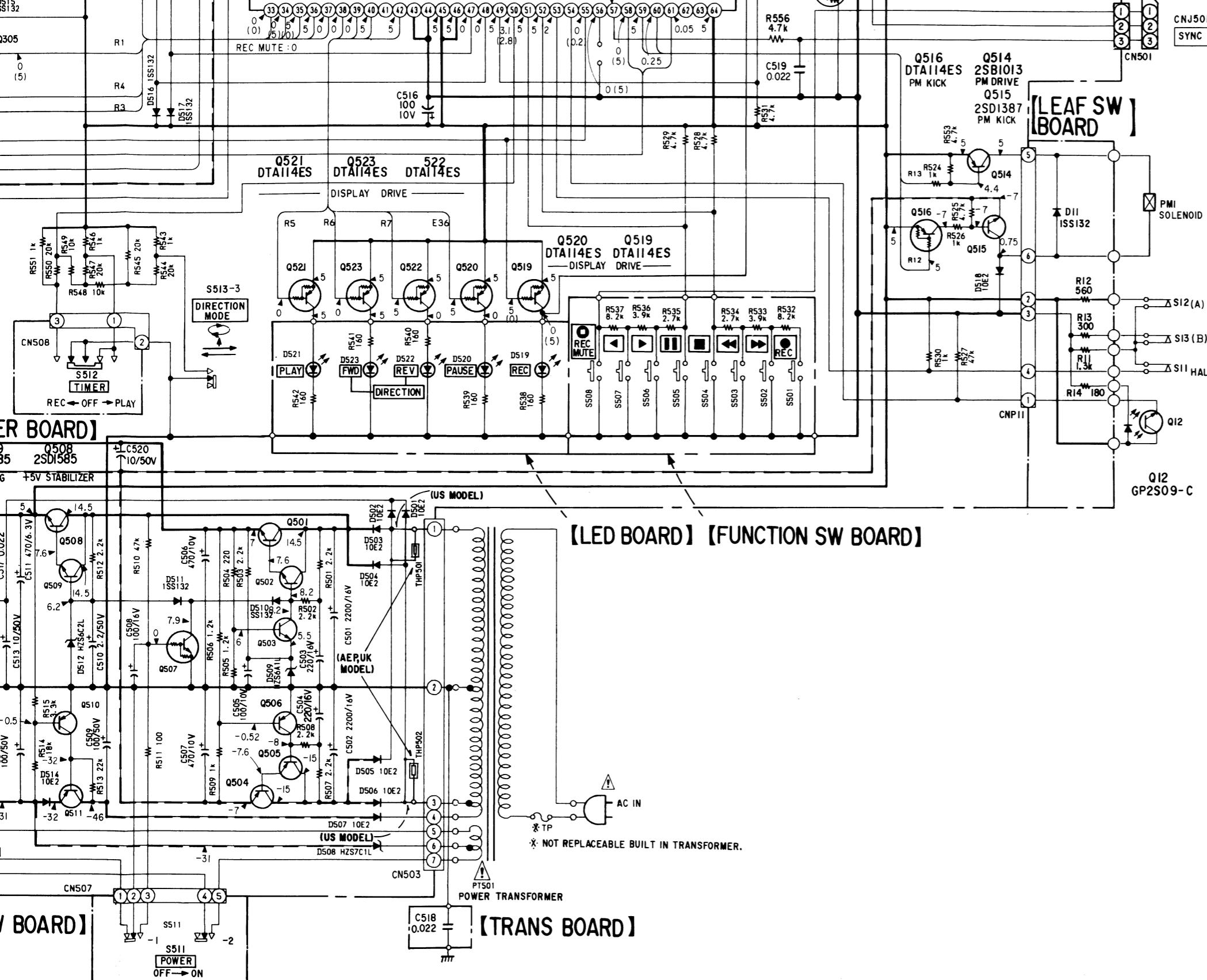
4-1. PRINTED WIRING BOARDS











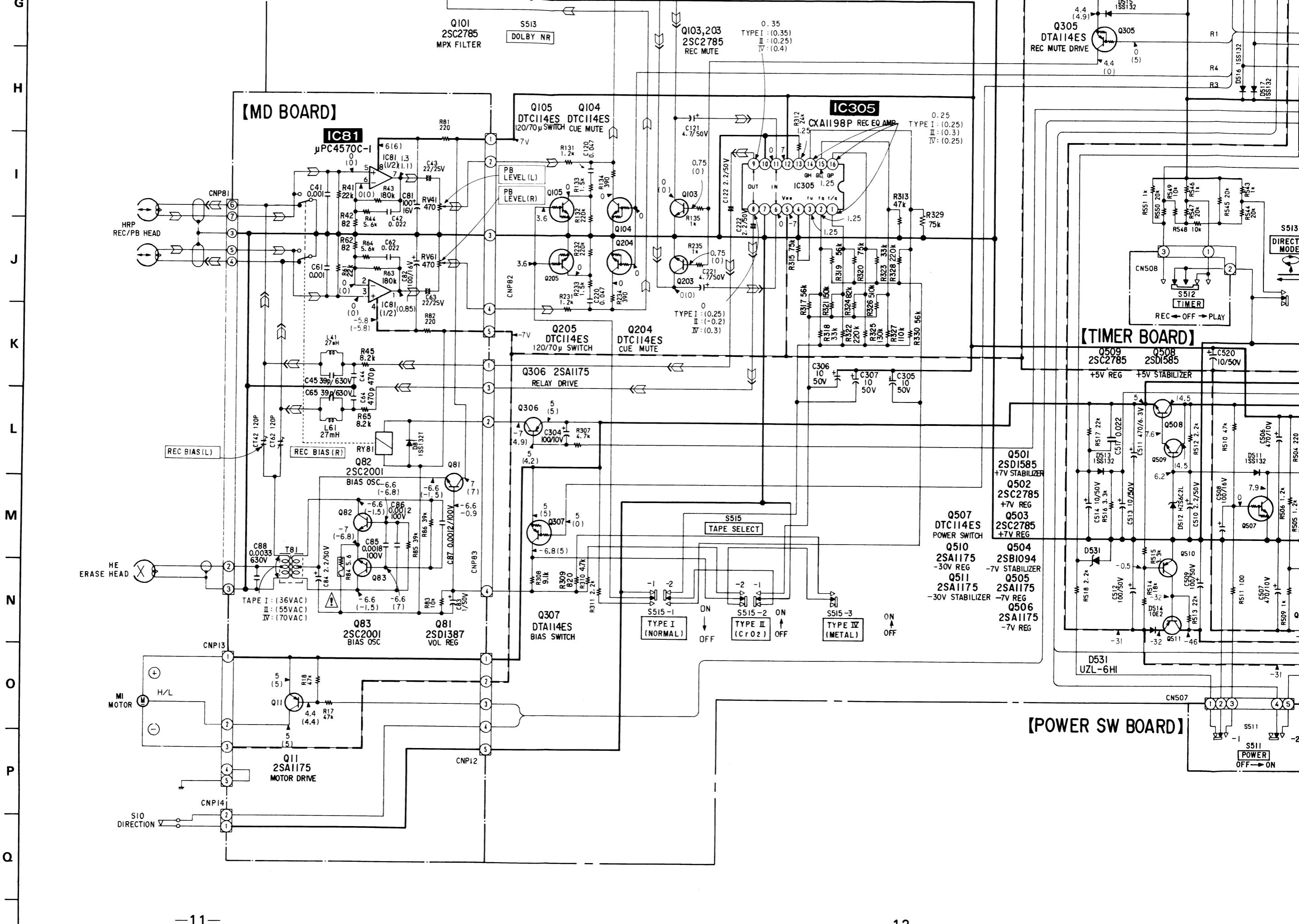
Note:

- All capacitors are in μ F unless otherwise noted. pF: $\mu\mu$ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4$ W or less unless otherwise specified.
- % : indicates tolerance.
- --- : fusible resistor.
- Switch

Ref. No.	Switch	Position
S10	DIRECTION	OFF
S11	HALF	OFF
S12	REC(A)	OFF
S13	REC(B)	OFF
S501	●	OFF
S502	►	OFF
S503	◀	OFF
S504	■	OFF
S505		OFF
S506	▶	OFF
S507	◀	OFF
S508	●	OFF
S509	MEMORY	OFF
S510	RESET	OFF
S511	POWER	OFF
S512	TIMER	OFF
S513	DOLBY NR/ DIRECTION MODE	OFF/ \leftrightarrow
S515	TAPE SELECT	TYPE I

- --- : B+ Line
- --- : B- Line
- \square : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: PLAY
- () : REC
- Voltages are taken with a VOM (50 k Ω /V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- Σ : PB
- $\Sigma\Sigma$: REC

Note: The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.



SECTION 6

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: $\mu\mu$ F.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
901	*A-2095-637-A	(US)....MOUNTED, PCB, AUDIO		C202	1-162-292-31	CERAMIC	680PF 10% 50V
901	*A-2095-642-A	(AEP, UK)....MOUNTED, PCB, AUDIO		C203	1-124-499-11	ELECT	1MF 20% 50V
902	 1-551-506-XX	(US)....CORD, POWER		C204	1-123-875-11	ELECT	10MF 20% 50V
902	 1-555-795-00	(AEP)....CORD, POWER		C205	1-161-375-00	CERAMIC	0.0022MF 30% 16V
902	 1-556-035-00	(UK)....CORD, POWER		C206	1-123-875-11	ELECT	10MF 20% 50V
903	*1-624-148-11	PC BOARD, LEAF SW		C207	1-130-479-00	MYLAR	0.0047MF 5% 50V
904	*A-2010-263-A	MOUNTED PCB, MD (B)		C208	1-136-173-00	FILM	0.47MF 5% 50V
905	A-2108-124-A	PC BOARD ASSY, HEAD (HRP/HE)		C209	1-136-167-00	FILM	0.15MF 5% 50V
CAPACITOR							
C41	1-130-471-00	MYLAR	0.001MF 5% 50V	C213	1-136-161-00	FILM	0.047MF 5% 50V
C42	1-136-157-00	FILM	0.022MF 5% 50V	C214	1-130-481-00	MYLAR	0.0068MF 5% 50V
C43	1-124-282-00	ELECT	22MF 20% 25V	C215	1-136-153-00	FILM	0.01MF 5% 50V
C44	1-162-290-31	CERAMIC	470PF 10% 50V	C216	1-124-252-00	ELECT	0.33MF 20% 50V
C45	1-136-440-11	FILM	39PF 5% 630V	C217	1-124-927-11	ELECT	4.7MF 20% 50V
C61	1-130-471-00	MYLAR	0.001MF 5% 50V	C218	1-124-274-00	ELECT	4.7MF 20% 50V
C62	1-136-157-00	FILM	0.022MF 5% 50V	C219	1-124-927-11	ELECT	4.7MF 20% 50V
C63	1-124-282-00	ELECT	22MF 20% 25V	C220	1-136-161-00	FILM	0.047MF 5% 50V
C64	1-162-290-31	CERAMIC	470PF 10% 50V	C221	1-124-927-11	ELECT	4.7MF 20% 50V
C65	1-136-440-11	FILM	39PF 5% 630V	C222	1-124-767-00	ELECT	2.2MF 20% 50V
C81	1-126-101-11	ELECT	100MF 20% 16V	C223	1-162-290-11	(AEP, UK)....CERAMIC	470PF 10% 50V
C82	1-126-101-11	ELECT	100MF 20% 16V	C301	1-123-875-11	ELECT	10MF 20% 50V
C83	1-124-499-11	ELECT	1MF 20% 50V	C302	1-123-875-11	ELECT	10MF 20% 50V
C84	1-124-925-11	ELECT	2.2MF 20% 50V	C303	1-123-382-00	ELECT	3.3MF 20% 50V
C85	1-130-279-91	FILM	0.0018MF 5% 100V	C304	1-124-443-00	ELECT	100MF 20% 10V
C86	1-130-275-91	FILM	0.0012MF 5% 100V	C305	1-123-875-11	ELECT	10MF 20% 50V
C87	1-130-275-91	FILM	0.0012MF 5% 100V	C306	1-123-875-11	ELECT	10MF 20% 50V
C88	1-136-557-91	FILM	0.0033MF 5% 630V	C307	1-123-875-11	ELECT	10MF 20% 50V
C101	1-124-499-11	ELECT	1MF 20% 50V	C501	1-124-556-11	ELECT	2200MF 20% 16V
C102	1-162-292-31	CERAMIC	680PF 10% 50V	C502	1-124-556-11	ELECT	2200MF 20% 16V
C103	1-124-499-11	ELECT	1MF 20% 50V	C503	1-124-120-11	ELECT	220MF 20% 16V
C104	1-123-875-11	ELECT	10MF 20% 50V	C504	1-124-120-11	ELECT	220MF 20% 16V
C105	1-161-375-00	CERAMIC	0.0022MF 30% 16V	C505	1-124-443-00	ELECT	100MF 20% 10V
C106	1-123-875-11	ELECT	10MF 20% 50V	C506	1-124-472-11	ELECT	470MF 20% 10V
C107	1-130-479-00	MYLAR	0.0047MF 5% 50V	C507	1-124-472-11	ELECT	470MF 20% 10V
C108	1-136-173-00	FILM	0.47MF 5% 50V	C508	1-126-101-11	ELECT	100MF 20% 16V
C109	1-136-167-00	FILM	0.15MF 5% 50V	C509	1-124-122-11	ELECT	100MF 20% 50V
C110	1-136-155-00	FILM	0.015MF 5% 50V	C510	1-124-925-11	ELECT	2.2MF 20% 50V
C111	1-136-169-00	FILM	0.22MF 5% 50V	C511	1-124-472-11	ELECT	470MF 20% 6.3V
C112	1-136-163-00	FILM	0.068MF 5% 50V	C512	1-124-122-11	ELECT	100MF 20% 50V
C113	1-136-161-00	FILM	0.047MF 5% 50V	C513	1-123-875-11	ELECT	10MF 20% 50V
C114	1-130-481-00	MYLAR	0.0068MF 5% 50V	C514	1-123-875-11	ELECT	10MF 20% 50V
C115	1-136-153-00	FILM	0.01MF 5% 50V	C515	1-124-444-00	ELECT	220MF 20% 6.3V
C116	1-124-252-00	ELECT	0.33MF 20% 50V	C516	1-124-443-00	ELECT	100MF 20% 10V
C117	1-124-927-11	ELECT	4.7MF 20% 50V	C517	1-161-494-00	CERAMIC	0.022MF 30% 25V
C118	1-124-274-00	ELECT	4.7MF 20% 50V	C518	1-161-494-00	CERAMIC	0.022MF 30% 25V
C119	1-124-927-11	ELECT	4.7MF 20% 50V	C519	1-161-494-00	CERAMIC	0.022MF 30% 25V
C120	1-136-161-00	FILM	0.047MF 5% 50V	C520	1-123-875-11	ELECT	10MF 20% 50V
C121	1-124-927-11	ELECT	4.7MF 20% 50V	C522	1-162-219-11	(AEP, UK)....CERAMIC	68PF 5% 50V
C122	1-124-767-00	ELECT	2.2MF 20% 50V	C523	1-162-215-11	(AEP, UK)....CERAMIC	47PF 5% 50V
C123	1-162-290-11	(AEP, UK)....CERAMIC	470PF 10% 50V	CF501	1-567-771-11	VIBRATOR, CERAMIC (6.0MHz)	
C201	1-124-499-11	ELECT	1MF 20% 50V	CF502	1-577-082-11	VIBRATOR, CERAMIC (4.0MHz)	

TC-RX50/RX50ES

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark		
CNJ501	1-559-684-11	CORD (WITH CONNECTOR) (SYNC)		M1	X-3343-408-1	MOTOR ASSY			
CNJ502	1-559-135-41	CORD (WITH CONNECTOR) (CONTROL S)		PM1	1-454-456-11	SOLENOID, PLUNGER			
CNP11	*1-564-499-11	PIN, CONNECTOR 6P		PT501	△1-449-160-11	(US)....TRANSFORMER, POWER			
CNP12	*1-564-339-61	PIN, CONNECTOR 5P		PT501	△1-449-161-11	(AEP, UK)....TRANSFORMER, POWER			
CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P		Q11	8-729-117-54	TRANSISTOR 2SA1175			
CNP14	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P		Q12	8-719-939-11	TRANSISTOR GP2S09-B			
CNP81	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P		Q81	8-729-801-93	TRANSISTOR 2SD1387			
CNP82	*1-564-339-51	PIN, CONNECTOR 5P		Q82	8-729-100-13	TRANSISTOR 2SC2001			
CNP83	*1-564-338-51	PIN, CONNECTOR 4P		Q83	8-729-100-13	TRANSISTOR 2SC2001			
CT42	1-141-391-11	CAP, ADJ		Q101	8-729-600-27	TRANSISTOR 2SC634SP			
CT62	1-141-391-11	CAP, ADJ		Q102	8-729-600-27	TRANSISTOR 2SC634SP			
D11	8-719-940-77	DIODE ISS132T		Q103	8-729-600-27	TRANSISTOR 2SC634SP			
D81	8-719-940-77	DIODE ISS132T		Q104	8-729-900-80	TRANSISTOR DTC114ES			
D101	8-719-940-76	DIODE ISS132		Q105	8-729-900-80	TRANSISTOR DTC114ES			
D201	8-719-940-76	DIODE ISS132		Q201	8-729-600-27	TRANSISTOR 2SC634SP			
D501	8-719-940-76	DIODE ISS132		Q202	8-729-600-27	TRANSISTOR 2SC634SP			
D502	8-719-940-76	DIODE ISS132		Q203	8-729-600-27	TRANSISTOR 2SC634SP			
D503	8-719-200-77	DIODE 10E2N		Q204	8-729-900-80	TRANSISTOR DTC114ES			
D504	8-719-200-77	DIODE 10E2N		Q205	8-729-900-80	TRANSISTOR DTC114ES			
D505	8-719-200-77	DIODE 10E2N		Q301	8-729-900-80	TRANSISTOR DTC114ES			
D506	8-719-200-77	DIODE 10E2N		Q302	8-729-900-61	TRANSISTOR DTA114ES			
D507	8-719-200-77	DIODE 10E2N		Q303	8-729-900-61	TRANSISTOR DTA114ES			
D508	8-719-933-49	DIODE HZS7C1L		Q304	8-729-900-80	TRANSISTOR DTC114ES			
D509	8-719-933-33	DIODE HZS6AIL		Q305	8-729-900-61	TRANSISTOR DTA114ES			
D510	8-719-940-76	DIODE ISS132		Q306	8-729-117-54	TRANSISTOR 2SA1175			
D511	8-719-940-76	DIODE ISS132		Q307	8-729-900-61	TRANSISTOR DTA114ES			
D512	8-719-933-41	DIODE HZS6C3L		Q501	8-729-107-25	TRANSISTOR 2SD1585-M			
D513	8-719-940-76	DIODE ISS132		Q502	8-729-600-27	TRANSISTOR 2SC634SP			
D514	8-719-200-77	DIODE 10E2N		Q503	8-729-600-27	TRANSISTOR 2SC634SP			
D515	8-719-940-76	DIODE ISS132T		Q504	8-729-111-67	TRANSISTOR 2SB1094-L			
D516	8-719-940-76	DIODE ISS132T		Q505	8-729-117-54	TRANSISTOR 2SA1175-HFE			
D517	8-719-940-76	DIODE ISS132T		Q506	8-729-117-54	TRANSISTOR 2SA1175			
D518	8-719-200-77	DIODE 10E2N		Q507	8-729-900-80	TRANSISTOR DTC114ES			
D519	8-719-303-74	DIODE SEL4214R		Q508	8-729-107-25	TRANSISTOR 2SD1585-M			
D520	8-719-303-84	DIODE SEL4914D		Q509	8-729-600-27	TRANSISTOR 2SC634SP			
D521	8-719-303-79	DIODE SEL4414G		Q510	8-729-117-54	TRANSISTOR 2SA1175			
D522	8-719-303-84	DIODE SEL4914D		Q511	8-729-140-	TRANSISTOR 2SB1116A-K-TP			
D523	8-719-303-84	DIODE SEL4914D		Q514	8-729-801-83	TRANSISTOR 2SB1013			
D524	8-719-940-76	DIODE ISS132		Q515	8-729-801-93	TRANSISTOR 2SD1387			
D525	8-719-940-76	DIODE ISS132		Q516	8-729-900-61	TRANSISTOR DTA114ES			
D526	8-719-940-76	DIODE ISS132		Q517	8-729-900-80	TRANSISTOR DTC114ES			
D527	8-719-940-76	DIODE ISS132		Q519	8-729-900-61	TRANSISTOR DTA114ES			
D528	8-719-940-76	DIODE ISS132		Q520	8-729-900-61	TRANSISTOR DTA114ES			
D529	8-719-940-76	DIODE ISS132		Q521	8-729-900-61	TRANSISTOR DTA114ES			
D530	8-719-940-76	DIODE ISS132		Q522	8-729-900-61	TRANSISTOR DTA114ES			
D531	8-719-933-39	DIODE HZS6CIL		Q523	8-729-900-61	TRANSISTOR DTA114ES			
FLT501	1-519-447-11	INDICATOR TUBE, FLUORESCENT		RESISTOR					
IC81	8-759-111-44	IC UPC4570C-1		R11	1-247-834-11	CARBON	1.3K	5%	1/4W
IC301	8-759-600-02	IC M5218L		R12	1-249-414-11	CARBON	560	5%	1/4W
IC302	8-752-018-70	IC CX20187		R13	1-247-818-11	CARBON	300	5%	1/4W
IC303	8-759-600-02	IC M5218L		R14	1-249-408-11	CARBON	180	5%	1/4W
IC304	8-759-600-02	IC M5218L		R17	1-249-437-11	CARBON	47K	5%	1/4W
IC305	8-752-032-60	IC CXA1198P		R18	1-249-437-11	CARBON	47K	5%	1/4W
IC501	8-759-971-73	IC MB88514B		R41	1-249-433-11	CARBON	22K	5%	1/4W
IC502	8-759-803-33	IC LC6528C-3175		R42	1-249-404-00	CARBON	82	5%	1/4W
J301	1-507-797-21	JACK, LARGE TYPE (MICROPHONE)		R43	1-247-885-00	CARBON	180K	5%	1/4W
J302	1-507-796-21	JACK (HEADPHONES)		R44	1-249-426-11	CARBON	5.6K	5%	1/4W
J303	1-565-259-11	JACK, PIN 4P (LINE IN/OUT)		R45	1-249-428-11	CARBON	8.2K	5%	1/4W
L41	1-410-780-11	INDUCTOR 27MMH		R61	1-249-433-11	CARBON	22K	5%	1/4W
L61	1-410-780-11	INDUCTOR 27MMH		R62	1-249-404-00	CARBON	82	5%	1/4W
LPF101	1-231-388-00	FILTER, LOW PASS		R63	1-247-885-00	CARBON	180K	5%	1/4W
LPF201	1-231-388-00	FILTER, LOW PASS		R64	1-249-426-11	CARBON	5.6K	5%	1/4W

Note: The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark			
R65	1-249-428-11	CARBON	8.2K	5%	1/4W	R224	1-249-429-11	CARBON	10K	5%	1/4W	
R81	1-249-409-11	CARBON	220	5%	1/4W	R225	1-247-840-00	CARBON	2.4K	5%	1/4W	
R82	1-249-409-11	CARBON	220	5%	1/4W	R226	1-249-409-11	CARBON	220	5%	1/4W	
R83	1-249-429-11	CARBON	10K	5%	1/4W	R227	1-249-434-11	CARBON	27K	5%	1/4W	
R84	△-1-217-384-00	FUSIBLE	5.6	5%	1/4W	F	R228	1-249-434-11	CARBON	27K	5%	1/4W
R85	1-249-436-11	CARBON	39K	5%	1/4W	R229	1-247-862-11	CARBON	20K	5%	1/4W	
R86	1-249-436-11	CARBON	39K	5%	1/4W	R230	1-249-397-11	CARBON	22	5%	1/4W	
R101	1-249-417-11	CARBON	1K	5%	1/4W	R231	1-249-418-11	CARBON	1.2K	5%	1/4W	
R102	1-249-435-11	CARBON	33K	5%	1/4W	R232	1-247-887-00	CARBON	220K	5%	1/4W	
R103	1-249-429-11	CARBON	10K	5%	1/4W	R233	1-249-419-11	CARBON	1.5K	5%	1/4W	
R104	1-249-411-11	CARBON	330	5%	1/4W	R234	1-249-412-11	CARBON	390	5%	1/4W	
R105	1-249-434-11	CARBON	27K	5%	1/4W	R235	1-249-417-11	CARBON	1K	5%	1/4W	
R106	1-249-437-11	CARBON	47K	5%	1/4W	R301	1-249-413-11	CARBON	470	5%	1/4W	
R107	1-249-417-11	CARBON	1K	5%	1/4W	R302	1-249-413-11	CARBON	470	5%	1/4W	
R108	1-249-417-11	CARBON	1K	5%	1/4W	R303	1-249-429-11	CARBON	10K	5%	1/4W	
R109	1-249-441-11	CARBON	100K	5%	1/4W	R304	1-215-469-00	METAL	100K	1%	1/6W	
R110	1-249-423-11	CARBON	3.3K	5%	1/4W	R305	1-249-425-11	CARBON	4.7K	5%	1/4W	
R111	1-249-427-11	CARBON	6.8K	5%	1/4W	R306	1-249-429-11	CARBON	10K	5%	1/4W	
R112	1-247-840-00	CARBON	2.4K	5%	1/4W	R307	1-249-425-11	CARBON	4.7K	5%	1/4W	
R113	1-249-425-11	CARBON	4.7K	5%	1/4W	R308	1-247-854-11	CARBON	9.1K	5%	1/4W	
R114	1-247-822-11	CARBON	430	5%	1/4W	R309	1-249-416-11	CARBON	820	5%	1/4W	
R115	1-249-427-11	CARBON	6.8K	5%	1/4W	R310	1-249-425-11	CARBON	4.7K	5%	1/4W	
R116	1-249-415-11	CARBON	680	5%	1/4W	R311	1-249-421-11	CARBON	2.2K	5%	1/4W	
R117	1-249-426-11	CARBON	5.6K	5%	1/4W	R312	1-247-864-11	CARBON	24K	5%	1/4W	
R118	1-249-421-11	CARBON	2.2K	5%	1/4W	R313	1-249-437-11	CARBON	47K	5%	1/4W	
R119	1-249-425-11	CARBON	4.7K	5%	1/4W	R315	1-247-876-11	CARBON	75K	5%	1/4W	
R120	1-249-433-11	CARBON	22K	5%	1/4W	R317	1-249-438-11	CARBON	56K	5%	1/4W	
R121	1-249-421-11	CARBON	2.2K	5%	1/4W	R318	1-249-435-11	CARBON	33K	5%	1/4W	
R122	1-249-417-11	CARBON	1K	5%	1/4W	R319	1-249-438-11	CARBON	56K	5%	1/4W	
R123	1-249-421-11	CARBON	2.2K	5%	1/4W	R320	1-247-876-11	CARBON	75K	5%	1/4W	
R124	1-249-429-11	CARBON	10K	5%	1/4W	R321	1-247-883-00	CARBON	150K	5%	1/4W	
R125	1-247-840-00	CARBON	2.4K	5%	1/4W	R322	1-247-887-11	CARBON	220K	5%	1/4W	
R126	1-249-409-11	CARBON	220	5%	1/4W	R323	1-249-435-11	CARBON	33K	5%	1/4W	
R127	1-249-434-11	CARBON	27K	5%	1/4W	R324	1-249-440-11	CARBON	82K	5%	1/4W	
R128	1-249-434-11	CARBON	27K	5%	1/4W	R325	1-247-882-00	CARBON	130K	5%	1/4W	
R129	1-247-862-11	CARBON	20K	5%	1/4W	R326	1-247-896-81	CARBON	510K	5%	1/4W	
R130	1-249-397-11	CARBON	22	5%	1/4W	R327	1-247-880-11	CARBON	110K	5%	1/4W	
R131	1-249-418-11	CARBON	1.2K	5%	1/4W	R328	1-247-887-11	CARBON	220K	5%	1/4W	
R132	1-247-887-00	CARBON	220K	5%	1/4W	R329	1-215-466-00	CARBON	75K	5%	1/4W	
R133	1-249-419-11	CARBON	1.5K	5%	1/4W	R330	1-249-438-11	CARBON	56K	5%	1/4W	
R134	1-249-412-11	CARBON	390	5%	1/4W	R501	1-249-421-11	CARBON	2.2K	5%	1/4W	
R135	1-249-417-11	CARBON	1K	5%	1/4W	R502	1-249-421-11	CARBON	2.2K	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	R503	1-249-421-11	CARBON	2.2K	5%	1/4W	
R202	1-249-435-11	CARBON	33K	5%	1/4W	R504	1-249-409-11	CARBON	220	5%	1/4W	
R203	1-249-429-11	CARBON	10K	5%	1/4W	R505	1-249-418-11	CARBON	1.2K	5%	1/4W	
R204	1-249-411-11	CARBON	330	5%	1/4W	R506	1-249-418-11	CARBON	1.2K	5%	1/4W	
R205	1-249-434-11	CARBON	27K	5%	1/4W	R507	1-249-421-11	CARBON	2.2K	5%	1/4W	
R206	1-249-437-11	CARBON	47K	5%	1/4W	R508	1-249-421-11	CARBON	2.2K	5%	1/4W	
R207	1-249-417-11	CARBON	1K	5%	1/4W	R509	1-249-417-11	CARBON	1K	5%	1/4W	
R208	1-249-417-11	CARBON	1K	5%	1/4W	R510	1-249-437-11	CARBON	47K	5%	1/4W	
R209	1-249-441-11	CARBON	100K	5%	1/4W	R511	1-249-405-11	CARBON	100	5%	1/4W	
R210	1-249-423-11	CARBON	3.3K	5%	1/4W	R512	1-249-421-11	CARBON	2.2K	5%	1/4W	
R211	1-249-427-11	CARBON	6.8K	5%	1/4W	R513	1-249-433-11	CARBON	22K	5%	1/4W	
R212	1-247-840-00	CARBON	2.4K	5%	1/4W	R514	1-249-432-11	CARBON	18K	5%	1/4W	
R213	1-249-425-11	CARBON	4.7K	5%	1/4W	R515	1-249-423-11	CARBON	3.3K	5%	1/4W	
R214	1-247-822-11	CARBON	430	5%	1/4W	R516	1-249-423-11	CARBON	3.3K	5%	1/4W	
R215	1-249-427-11	CARBON	6.8K	5%	1/4W	R517	1-249-433-11	CARBON	22K	5%	1/4W	
R216	1-249-415-11	CARBON	680	5%	1/4W	R518	1-249-421-11	CARBON	2.2K	5%	1/4W	
R217	1-249-426-11	CARBON	5.6K	5%	1/4W	R519	1-249-405-11	CARBON	100	5%	1/4W	
R218	1-249-421-11	CARBON	2.2K	5%	1/4W	R520	1-249-429-11	CARBON	10K	5%	1/4W	
R219	1-249-425-11	CARBON	4.7K	5%	1/4W	R521	1-249-393-11	CARBON	10	5%	1/4W	
R220	1-249-433-11	CARBON	22K	5%	1/4W	R524	1-249-417-11	CARBON	1K	5%	1/4W	
R221	1-249-421-11	CARBON	2.2K	5%	1/4W	R525	1-249-425-11	CARBON	4.7K	5%	1/4W	
R222	1-249-417-11	CARBON	1K	5%	1/4W	R526	1-249-417-11	CARBON	1K	5%	1/4W	
R223	1-249-421-11	CARBON	2.2K	5%	1/4W	R527	1-249-437-11	CARBON	47K	5%	1/4W	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

TC-RX50/RX50ES

Ref.No	Part No.	Description	Remark		
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-425-11	CARBON	4.7K	5%	1/4W
R530	1-249-417-11	CARBON	1K	5%	1/4W
R531	1-249-425-11	CARBON	4.7K	5%	1/4W
R532	1-249-428-11	CARBON	8.2K	5%	1/4W
R533	1-249-424-11	CARBON	3.9K	5%	1/4W
R534	1-249-422-11	CARBON	2.7K	5%	1/4W
R535	1-249-422-11	CARBON	2.7K	5%	1/4W
R536	1-249-424-11	CARBON	3.9K	5%	1/4W
R537	1-249-428-11	CARBON	8.2K	5%	1/4W
R538	1-247-812-11	CARBON	160	5%	1/4W
R539	1-247-812-11	CARBON	160	5%	1/4W
R540	1-247-812-11	CARBON	160	5%	1/4W
R541	1-247-812-11	CARBON	160	5%	1/4W
R542	1-247-812-11	CARBON	160	5%	1/4W
R543	1-249-417-11	CARBON	1K	5%	1/4W
R544	1-247-862-11	CARBON	20K	5%	1/4W
R545	1-247-862-11	CARBON	20K	5%	1/4W
R546	1-249-417-11	CARBON	1K	5%	1/4W
R547	1-247-862-11	CARBON	20K	5%	1/4W
R548	1-249-429-11	CARBON	10K	5%	1/4W
R549	1-249-429-11	CARBON	10K	5%	1/4W
R550	1-247-862-11	CARBON	20K	5%	1/4W
R551	1-249-417-11	CARBON	1K	5%	1/4W
R552	1-249-429-11	CARBON	10K	5%	1/4W
R553	1-249-425-11	CARBON	4.7K	5%	1/4W
R554	1-249-429-11	CARBON	10K	5%	1/4W
R555	1-249-429-11	CARBON	10K	5%	1/4W
R556	1-249-425-11	CARBON	4.7K	5%	1/4W
RB501	1-233-140-11	COMPOSITION CIRCUIT BLOCK	100KX8		
RB502	1-233-141-11	COMPOSITION CIRCUIT BLOCK	100KX9		
RV41	1-228-989-00	RES, ADJ, CARBON	470		
RV61	1-228-989-00	RES, ADJ, CARBON	470		
RV101	1-228-994-00	RES, ADJ, CARBON	10K		
RV201	1-228-994-00	RES, ADJ, CARBON	10K		
RV301	1-238-097-11	RES, VAR, CARBON	20K/20K (REC LEVEL)		
RY81	1-515-614-11	RELAY			
S10	1-571-028-11	SWITCH, LEAF (DIRECTION)			
S11	1-571-281-21	SWITCH, LEAF (HALF)			
S12	1-571-281-21	SWITCH, LEAF (REC (A))			
S13	1-571-281-21	SWITCH, LEAF (REC (B))			
S501	1-554-303-21	SWITCH, KEY BOARD (● REC)			
S502	1-554-303-21	SWITCH, KEY BOARD (►►)			
S503	1-554-303-21	SWITCH, KEY BOARD (◀◀)			
S504	1-554-303-21	SWITCH, KEY BOARD (■)			
S505	1-554-303-21	SWITCH, KEY BOARD (II)			
S506	1-554-303-21	SWITCH, KEY BOARD (►)			
S507	1-554-303-21	SWITCH, KEY BOARD (◀)			
S508	1-554-303-21	SWITCH, KEY BOARD (REC MUTE)			
S509	1-554-303-21	SWITCH, KEY BOARD (MEMORY)			
S510	1-554-303-21	SWITCH, KEY BOARD (RESET)			
S511	1-570-103-21	SWITCH, PUSH (1 KEY) (POWER)			
S512	1-554-423-00	SWITCH, SLIDE (TIMER)			
S513	1-571-369-11	SWITCH, PUSH (3 KEY) (DOLBY NR/DIRECTION MODE)			
S515	1-571-370-11	SWITCH, PUSH (3 KEY) (TAPE SELECT)			
SPK101	1-235-186-00	ENCAPSULATED COMPONENT			
SPK201	1-235-186-00	ENCAPSULATED COMPONENT			
T81	1-433-333-11	TRANSFORMER, BIAS OSCILLATION			
THP501	1-808-065-11	(AEP, UK)....THERMISTOR, POSITIVE			
THP502	1-808-065-11	(AEP, UK)....THERMISTOR, POSITIVE			

ACCESSORY & PACKING MATERIAL

Part No.	Description	Remark
1-558-233-11	CORD (WITH CONNECTOR)(SIRCS)4P	
1-559-533-11	CORD, CONNECTION	
* 3-327-844-51	(AEP, UK)....INDIVIDUAL CARTON	
* 3-327-844-61	(US)....INDIVIDUAL CARTON	
* 3-332-555-01	(US, UK)....CUSHION	
* 3-346-203-01	(AEP)....CUSHION	
3-701-630-00	BAG, POLYETHYLENE	
3-703-450-01	(US)....INSTRUCTION	
* 3-704-343-01	SHEET (STANDARD), PROTECTION	
3-769-894-11	(AEP, UK)....MANUAL, INSTRUCTION	
3-769-894-21	(US)....MANUAL, INSTRUCTION	
3-769-894-41	(AEP)....MANUAL, INSTRUCTION	